

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) An alkaloid formulation comprising the reaction product of one or more alkaloids having a tertiary amine with one or more phosphorylated electron transfer agents selected from the group consisting of hydroxy chromans; quinols being the reduced forms of vitamin K1 and ubiquinone; hydroxy carotenoids; calciferol, ascorbic acid and mixtures thereof.

2. (Previously Presented) The alkaloid formulation of claim 1, wherein the one or more phosphorylated electron transfer agents are phosphorylated tocopherols.

3. (Previously Presented) The alkaloid formulation of claim 1, wherein the formulation is a topical formulation.

4. (Previously Presented) The alkaloid formulation of claim 1, wherein the formulation is an oral formulation.

5. (Previously Presented) The alkaloid formulation of claim 4, further comprising an enteric coating.

6. (Previously Presented) The alkaloid formulation of claim 4, wherein the formulation is selected from the group consisting of tablets, powders, chewable tablets, capsules, oral suspensions, suspensions, emulsions or fluids, children's formulations, enteral feeds, nutraceuticals, and functional foods.

7. (Previously Presented) The alkaloid formulation of claim 1, wherein the formulation is a buccal formulation.

8. (Canceled)

9. (Previously Presented) The alkaloid formulation of claim 1, wherein the electron transfer agent is selected from the group consisting of tocopherol and other tocopherols, retinol, vitamin K1, and mixtures thereof.

10. (Previously Presented) The alkaloid formulation of claim 9, wherein the electron transfer agent is selected from the group consisting of the tocopherols, and mixtures thereof.

11. (Previously Presented) The alkaloid formulation of claim 10, wherein the electron transfer agent is α -tocopherol.

12. (Previously Presented) The alkaloid formulation of claim 11, wherein the one or more phosphorylated electron transfer agents are selected from the group consisting of mono-tocopheryl phosphate, di-tocopheryl phosphate, and mixtures thereof.

13. (Previously Presented) The alkaloid formulation of claim 12, wherein the one or more phosphorylated electron transfer agents are a mixture of mono-tocopheryl phosphate and di-tocopheryl phosphate.

14. (Previously Presented) The alkaloid formulation of claim 1, wherein the one or more phosphorylated electron transfer agents is a phosphatide.

15. (Previously Presented) The alkaloid formulation of claim 1, wherein the one or more alkaloids having a tertiary amine are selected from the group consisting of tertiary amines which are alicyclic with the nitrogen atom as a common member of three rings; are cyclic where the nitrogen is incorporated into a single ring and alkylated; or have no cyclic structure incorporating the nitrogen; and mixtures thereof.

16. (Previously Presented) The alkaloid formulation of claim 15, wherein the one or more alkaloids having a tertiary amine are selected from the group consisting of atropine, quinine, opioids, fentanyl, nicotine, fenspiride, flurazepam, morphine and codeine.

17. (Previously Presented) The alkaloid formulation of claim 1, wherein the one or more alkaloids is atropine.

18. (Previously Presented) The alkaloid formulation of claim 1, wherein the one or more alkaloids is morphine.

19. – 20. (Cancelled)

21. (Previously Presented) A pharmaceutical composition comprising the reaction product of one or more alkaloids having a tertiary amine with one or more phosphorylated electron transfer agents selected from the group consisting of hydroxy chromans; quinols being the reduced forms of vitamin K1 and ubiquinone; hydroxy carotenoids; calciferol, ascorbic acid and mixtures thereof.

22. (Previously Presented) The pharmaceutical composition of claim 21, wherein the electron transfer agent is tocopherol.

23. (Previously Presented) The alkaloid formulation of claim 1, wherein the hydroxyl chromans is an alpha, beta, gamma, or delta tocol present in enantiomeric or racemic forms.

24. (Previously Presented) The alkaloid formulation of claim 1, wherein the hydroxyl cartenoid is a retinol.

25. (Previously Presented) The alkaloid formulation of claim 16, wherein the one or more alkaloids having a tertiary amine is an opioid.